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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/304,841	05/05/1999	MASAYASU KOYAMA	Q54287	1233

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EXAMINER

PATTERSON, MARC A

ART UNIT

PAPER NUMBER

1772

24

DATE MAILED: 09/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N . 09/304,841	Applicant(s) KOYAMA ET AL.	
	Examiner Marc A Patterson	Art Unit 1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,6,8,10-15 and 20 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,6,8,10-15 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Art Unit: 1772

DETAILED ACTION

Specification

1. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claim 16 been renumbered 20.

WITHDRAWN REJECTIONS

2. The 35 U.S.C. 112 second paragraph rejection of Claims 1, 4, 6, 8 and 10 – 15 as being unpatentable over Otaki et al. (U.S. Patent No. 5,908,676), of record on page 2 of the previous Action, are withdrawn.

NEW REJECTIONS

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 4, 6, 10, 13 – 15 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koyama et al (U.S. Patent No. 5,542,557).

Art Unit: 1772

With regard to Claim 1, 4, 6, 10, 13 – 15 and 20, Koyama et al disclose a thermoplastic resin composition (column 3, lines 46 – 48) containing an oxygen absorbing agent (column 9, lines 48 – 61) and a blend of two resins which are incompatible with each other (one is a dispersion phase in the other; column 10, lines 55 – 62); one resin is a propylene polymer (column 8, lines 18 – 39) and the other resin is an ethylene polymer (column 10, lines 63 – 67; column 11, lines 1 – 2); the oxygen absorbing agent comprises oxygen absorbing agent particles comprising a reducing iron powder (iron disoxidation powder; column 9, lines 61 – 66) and a layer of an oxidation promoter which sticks to the surface of the powder (coating of metal halide; column 9, lines 61 – 66); the particles have an average diameter of less than 50 μm (column 10, lines 26 – 28). Koyama et al fail to disclose particles having an aspect ratio of 0.6 and a compression degree of at least 20%. However, as stated above, Koyama et al disclose an average diameter of less than 50 μm , thus a shortest diameter of less than 50 μm . The shortest diameter, and therefore the aspect ratio and compression degree, would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end use of the product. It therefore would be obvious for one of ordinary skill in the art to vary the aspect ratio and compression degree, since the aspect ratio and compression degree would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end result as shown by Koyama et al. *In re Boesch and Slaney*, 205 USPQ 215 (CCPA 1980).

Koyama et al also fail to disclose particles which are flat. However, Koyama et al disclose particles which are granular, and therefore three – dimensional (column 10, lines 3 – 8). It would have been obvious for one of ordinary skill in the art at the time Applicant's invention

Art Unit: 1772

was made to have provided for flat particles, since the modification would have involved a mere change in shape. A change in shape is generally recognized as being within the level of ordinary skill in the art. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

With regard to Claim 4, the ethylene polymer is present in the blend at greater than 1% by weight (column 11, lines 25 – 26).

With regard to Claim 6, the oxygen absorbing agent is contained in an amount of 1 to 200% by weight (column 13, lines 12 – 33).

With regard to Claim 10, the scope of the claims falls within the limitations of Koyama et al as discussed above. The method of making the absorbing agent (product – by – process) is given little patentable weight.

With regard to Claims 13 – 15, the composition is comprised in a liner for cap for a container (column 4, lines 34 – 48) and is in a layer between two other layers which do not comprise oxygen absorbing agent (the shell of the cap, and a coating layer; column 5, lines 5 – 11). With regard to the claimed aspect of the container and cap being ‘molded from a laminated body obtained by laminating a thermoplastic resin layer,’ the scope of the claims falls within the limitations of Koyama et al as discussed above. The method of making the container and cap (product – by – process) is given little patentable weight.

5. Claims 8 and 11 – 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koyama et al (U.S. Patent No. 5,542,557) in view of Japanese Patent No. 59085804.

Koyama et al disclose a composition comprising an oxygen absorbing agent comprising iron oxide and a promoter as discussed above. The promoter is present in the amount of 1% by

Art Unit: 1772

weight (column 10, lines 39 – 46). With regard to Claims 8 and 11 – 12, Koyama et al fail to disclose an absorbing agent which has a specific surface area of at least 0.5 square meters per gram and an apparent density of not larger than 2.2 grams per cubic centimeter.

Japanese Patent No. 59085804 teaches the use of iron oxide for chemical reduction having an apparent density of 2.2 grams per cubic centimeter (English Abstract) for the purpose of using an iron oxide of any shape (English Abstract). The desirability of providing for iron oxide having an apparent density of 2.2 grams per cubic centimeter in Koyama et al, which is used for chemical reduction, would therefore be obvious to one having ordinary skill in the art.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for an apparent density of 2.2 grams per cubic centimeter in Koyama et al in order to use an iron oxide having different shapes as taught by Japanese Patent No. 59085804.

Japanese Patent No. 59085804 also fails to teach a specific surface area of at least 0.5 square meters per gram. However, Japanese Patent No. 59085804 teaches a specific surface area which is sufficient to cause chemical reduction (English Abstract). Therefore, the specific surface area would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end use of the product. It therefore would be obvious for one of ordinary skill in the art to vary the specific surface area, since the specific surface area would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end result as shown by Japanese Patent No. 59085804. *In re Boesch and Slaney*, 205 USPQ 215 (CCPA 1980).

ANSWERS TO APPLICANT'S ARGUMENTS

6. Applicant's arguments regarding the 35 U.S.C. 112 second paragraph rejection of Claims 1, 4, 6, 8 and 10 – 15, of record on page 2 of the previous Action, have been considered and have been found to be persuasive. The rejection is therefore withdrawn.

Applicant's arguments regarding the 35 U.S.C. 103(a) rejection of Claims 1, 4, 6, 10 and 13 – 15 as being unpatentable over Koyama et al (U.S. Patent No. 5,542,557) and 35 U.S.C. 103(a) rejection of Claims 8 and 11 – 12 as being unpatentable over Koyama et al (U.S. Patent No. 5,542,557) in view of Japanese Patent No. 59085804, of record on page 2 of the previous Action, have been considered but have not been found to be persuasive for the reasons set forth below

Applicant argues, on page 4 of Paper No. 24, that the rejection is improper because Koyama et al merely disclose a hydrophilic substance which is a promoter in a resin. However, as stated above Koyama et al also disclose that the hydrophilic substance is a resin, and is a dispersion phase is another resin; the resins are therefore incompatible.

Applicant also argues, on page 5, that Koyama et al disclose a resin which does not contain an oxygen absorbing agent. However, as discussed above, Koyama et al clearly disclose an oxygen absorbing agent in column 9, lines 61 – 66.

Applicant also argues, on page 5, that further portions describe polyethylene oxide modified hydrophilic substances which are promoters, but do not describe resin for use as a resin matrix. However, as stated above, Koyama et al clearly disclose in column 8, lines 18 – 39 the use of polypropylene as the resin in which the dispersion phase is dispersed.

Art Unit: 1772

Applicant also argues, on page 5, that Koyama et al do not describe the use of a plurality of resins which are blended together being selected so as to be incompatible with one another. However, as stated above, Koyama et al also disclose that the hydrophilic substance is a resin, and is a dispersion phase is another resin; the resins are therefore incompatible. Furthermore, the selection of a resin is not claimed, and would appear to constitute a method limitation, which is given little patentable weight.

Applicant also argues, on page 5, that the aspect ratio and compression ratio are not exclusively derived from particle diameter. However, as stated above, the aspect ratio and compression ratio are dependent on the ratio of the smallest diameter of a given particle to the shortest diameter of a given particle, and would be changed by a change in that ratio.

Applicant also argues, on page 6, that the use of an oxygen absorbing particle which is flat has not been recognized by Koyama et al. However, as stated above, Koyama et al disclose particles which are granular, and therefore three – dimensional (column 10, lines 3 – 8). It would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for flat particles, since the modification would have involved a mere change in shape. A change in shape is generally recognized as being within the level of ordinary skill in the art. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

Applicant also argues, on page 7, that Koyama et al does not teach the use of dry milling. However as stated above, the method of making the absorbing agent (product – by – process) is given little patentable weight.

Applicant also argues, on page 8, that the apparent density according to Japanese Patent No. 59085804 is the density of iron oxide, whereas the claimed apparent density is the apparent

Art Unit: 1772

density of the oxygen absorbing agent comprising a layer of oxidation promoter or catalyst. However, the claimed oxygen absorbing agent comprises iron oxide. Furthermore, as stated above, in view of Japanese Patent No. 59085804, the desirability of providing for iron oxide having an apparent density of 2.2 grams per cubic centimeter in Koyama et al, which is used for chemical reduction, would therefore be obvious to one having ordinary skill in the art.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for an apparent density of 2.2 grams per cubic centimeter in Koyama et al in order to use an iron oxide having different shapes as taught by Japanese Patent No. 59085804.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Art Unit: 1772

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc Patterson, whose telephone number is (703) 305-3537. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by phone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached at (703) 308-4251. FAX communications should be sent to (703) 872-9310. FAXs received after 4 P.M. will not be processed until the following business day.

Marc A. Patterson, PhD.

Marc Patterson
Art Unit 1772

Harold Pyon
HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772

9/6/03